

Receiving Report

Date: 14/3/18

Batch No: M130418

Supplier: AIR DYNAMIC

Dart P/O: 25255

Packing Slip: Yes ✓ No ✓
 Invoice: Yes ✓ No ✓
 Receipt: Cash ✓ Cr ✓
 New Supplier Yes ✓ No ✓

Release Note Attached: Yes ✓ No ✓ N/A ✓
 Waybill Attached: Yes ✓ No ✓
 Shipment Complete: Yes ✓ No ✓ N/A ✓
 QC18 Inspection ✓ N/A ✓
 Work Order N/A ✓

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Rec'd	Quantity Short	Quantity Inspected	Quantity Rejected	Comment / NCR Number

Initials of Receiver

QC12

Production/Admin:

Date

Received/Costing

Initial

Location



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO25255**

Purchase Order Date 7/31/2014

PO Print Date 7/31/2014

Page Number 1 of 1

Order From :
AIR DYNAMICS
19420B CLARK GRAHAM AVENUE
BAIE D'URFE, QUEBEC H9X 3R8

VC-AD001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 514-457-4287

Ship To Contact
Ship To Phone
Ship Via: Purolator ground collect
Ship Acct:

Buyer
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB EXW - (Ex Works)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	EA 9320NA Kevin Cadeaux	Epoxy Paste Adhesive (Qt.Kit)	8/22/2014 Yes 8/22/2014		1.00 Each	\$250.00	\$250.00
Line Total:							\$250.00
2	71401-45 Procurement Quality Clauses A005 RIGHT OF ENTRY A013 SHELF LIFE CONTROLLED MATERIAL; 80% SHELF LIFE REQUIRED AT RECEIPT A026 CERTIFICATION OF MATERIAL CONFORMANCE A040 NOTIFICATION OF QUALITY ESCAPE A042 DART NOTIFICATION BY SUPPLIER A043 RETENTION OF QUALITY DOCUMENTS		8/22/2014 No 8/22/2014		0.00	\$0.00	\$0.00
Line Total:							\$0.00
PO Total:							\$250.00

PO Instructions: Purolator Acc#7684382

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 1

Change Date: 7/31/2014

**Air Dynamics**19420B Clark Graham Avenue
Baie D'Urfé, Québec H9X 3R8Tel.: (514) 457-4287
Fax: (514) 457-4143**BON DE
LIVRAISON**

PACKING SLIP 730970

CUSTOMER NO. 700

Facture à:
Invoice to:Expédié à:
Ship to:DART AEROSPACE LTD
1270 ABERDEEN STREET
HAWKSBURY ON K6A 1K7

ACCTS PAY/ DALE BATES

SAME

Date	Expédié par/Ship via:	F.A.B./F.O.B.	Conditions/Terms
09/17/14	PUROLATOR COLLECT		

No. de commande Purchase order no.	Date de commande Order date	Vendeur(se)/Salesperson	Notre No. de commande/Our order number
PO25255	08/25/14	BRENDA SHEA	

Qté req/ Qty req	Expédié Shipped	En souffe/ B.O.	No. d'article Item Number	Description	Prix unitaire Unit price	Prix rapporté Extended price
1	1		EA9320	ORDERED BY MIKE GREGOIRE - SHIP VIA PUROLATOR		
1	1		BATCH	HYSOL ADHESIVE (QT.KIT) EA9320NA		
				BATCH #B:30735 LOT# JH4CAI7330 EXP. MAY 1/2015		
				MFG CERTIFICATION/MSDS INCLUDED		

JE CERTIFIE PAR LES PRESENTES QUE LES PIECES D'AERONEFS
DECRIES DANS LE PRESENT CERTIFICAT ONT ETE OBTENUES D'UNE
SOURCE D'APPROVISIONNEMENT CONFORME AUX CONDITIONS
AUXQUELLES LE CERTIFICAT D'AUTORISATION DE DISTRIBUTION
NO. 12-89 DU MINISTERE DES TRANSPORTS A ETE ATTRIBUE.

DATE

SIGNED

17 Septembre 2014
Brenda SheaI hereby certify that the aircraft parts, appliances and/or
materials described hereon were acquired from a source of
supply that is consistent with the conditions under which
the Department of Transport distributor approval
No. 12-89 has been granted.

Date:

September 17, 2014
Brenda Shea
Inspector's Signature

**RELEASE
CERTIFICATE**

AIR DYNAMICS

19420B Clark Graham Avenue
Baie d'Urfé, Québec, H9X 3R8

514-457-4287

AD-1(A)

NOMENCLATURE

PART NUMBER

MAKE

SERIAL NUMBER

NEW

REPAIRED

INSPECTED

OVERHAULED

MODIFIED

PREVIOUS CERTIFICATION

I HEREBY CERTIFY THAT THE AIRCRAFT PARTS, APPLIANCES AND/OR MATERIALS DESCRIBED HEREON
WERE ACQUIRED FROM A SOURCE OF SUPPLY THAT IS CONSISTANT WITH THE CONDITIONS UNDER
WHICH THE DEPARTMENT OF TRANSPORT DISTRIBUTOR APPROVAL NO. 12-89 HAS BEEN GRANTED.

DATE

INSPECTOR'S SIGNATURE

HYGOL ADHESIVE

EA 9320-NA

HENKEL AEROSPACE

-

(2/p May 1/2015)

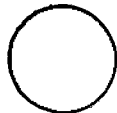
BH 30735

LOT# JH4CAI7330

September 17, 2014

Brenda Shea

QTY. 1
(QT. KIT)



JE CERTIFIE PAR LES PRESENTES QUE LES PIECES D'AERONEFS
DECRIRES DANS LE PRESENT CERTIFICAT ONT ETE OBTENUES D'UNE
SOURCE D'APPROVISIONNEMENT CONFORME AUX CONDITIONS
AUXQUELLES LE CERTIFICAT D'AUTORISATION DE DISTRIBUTION
NO. 12-89 DU MINISTERE DES TRANSPORTS A ETE ATTRIBUE.

DATE

17 Septembre 2014

SIGNATURE

Brenda Shea





30735

Certificate of Analysis

Attention of:
Wolcott-Park Inc
1700 Hudson Ave
Rochester NY 14617-6155

17 SEP. 2014

DATE
PAGE30 April 2014
1 of 1

Purchase Order: 1002000
Date of P.O.: 31 March 2014
Sales Order: 90292252
Delivery Note or Debit Memo: 86236663
Delivery Note position: 900001
Customer No.: 434488

Material:

LOCTITE EA 9320NA QT AERO
(A)-1QT (B)-8OZ KIT
Known as: HYSOL EA 9320NA QT SYSTEM

AIR DYNAMICS CO. LTD.
19420B CLARK GRAHAM AVE.
BAIE D'URFÉ, QUÉ. H9X 3R8
TÉL: (514) 437-4287

Material-No:
Legacy Code:
Bulk Material:
Batch no:
Shipment Quantity:
Manufacture date:
Specification:
Comments:

1053927
AS9358016
1053368
JH4CAI7330
24.000 EA
26 February 2014

HS-AS9358

Revision: A

NOTE: SPECIFICATION REQUIREMENT APPLIES TO AVERAGE RESULT ONLY

Batch Tested	Test Properties	Specification	Individuals	Avg	UOM
JH4C007330	Color and Appearance, Pt A - Off-White; NFM		OK		
JH4C007330	Viscosity (Brookfield), PtA@25C (HBT #7, 20rpm)	2200-5500	4320,4360,4440	4373	poise
JH4C007330	Color and Appearance, Pt B - Blue; NFM		OK		
JH4C007330	Viscosity (Brookfield), PtB@25C (LVF #1, 60rpm)	0.12-0.16	0.12,0.12,0.13	0.12	poise
JH4C007330	Pot Life, 200gms@77F	>= 25	25	25	minute(s)
JH4C007330	Shore D Hardness, ShoreD 100	>= 75	79,80	80	
JH4C007330	T-Peel Strength, TP@77F 100 (Alclad/PAA)	>= 17.0	41.7,43.4,47.6,47.8	45.9	lb/in
JH4C007330	Tensile Shear, TS@-67F 100 (Alclad/PAA)	>= 3000	48.8 4940,5020,5130,5130	5340	lb/sq.inch
JH4C007330	Tensile Shear, TS@77F 100 (Alclad/PAA)	>= 3700	6480 4680,4960,4990,5070	4980	lb/sq.inch
JH4C007330	Tensile Shear, TS@180F 100 (Alclad/PAA)	>= 1500	5200 2400,2400,2440,2760	2566	lb/sq.inch
JH4C007330	Date Of Testing	March 12, 2014	2830		

The above identified product conforms to all requirements listed above at the date and place of shipment from Henkel. If altered in any manner this test report is not valid. Test reports are available for inspection at Henkel Corporation, Bay Point, California. Henkel warrants this product for 12 months from the date of shipment from Henkel or an authorized distributor when stored at a temperature of <=82F / <=28C. The warranty set forth is exclusively for the benefit of any recipient of the above identified product shipped directly from Henkel or a distributor that has been expressly authorized in writing by Henkel to provide such warranty on behalf of Henkel. Unless received directly from Henkel, please refer to the provider's certified letter from Henkel that establishes them as a Henkel authorized entity.

Signed Test Report on File

Henkel Quality Assurance

Date of Shipment: 01 May 2014

Henkel Corporation,
Aerospace Group
2850 Willow Pass Road
Bay Point, CA 94665-3237

Tel.: (925) 458-8000
Fax: (925) 458 8030
www.aerospace.henkel.com

Material Safety Data Sheet



Revision Number: 002.1

Issue date: 03/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: EA 9320NA PART A BULK
Product type: Adhesive for the Aerospace Industry

IDH number: 1053239
Item number: AA9358000
Region: United States

Company address:
Henkel Corporation
2850 Willow Pass Road
Bay Point, California 94565

Contact information:
Telephone: 925.458.8000 Fax: 925.458.8030
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

Contains one or more components for which a Toxic Substances Control Act (TSCA) Low Volume Exemption (LVE) applies. See Section 15.

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state: Liquid
Color: Beige
Odor: Epoxy

HMIS:

HEALTH: *2
FLAMMABILITY: 1
PHYSICAL HAZARD: 0
Personal Protection: See MSDS Section 8

WARNING: CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: This product is irritating to the respiratory system.
Skin contact: This product is irritating to the skin. This product may cause an allergic skin reaction.
Eye contact: This product is irritating to the eyes.
Ingestion: Not expected under normal conditions of use.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION//INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Epoxy resin	Proprietary	60 - 100
Epoxy resin	Proprietary	5 - 10
Modified Epoxy Resin	Unknown	5 - 10
Silicon dioxide	7631-86-9	1 - 5
Glass, oxide, chemicals	65997-17-3	1 - 5

CERCLA/SARA Section 302 EHS: None above reporting de minimus
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA 313: None above reporting de minimus

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL Status: One or more components are not listed on, and are not exempt from listing on either the Domestic Substances List or the Non-Domestic Substances List.
WHMIS hazard class: D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Mark Mau, Regulatory Affairs Specialist

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Corporation does not assume responsibility for any results obtained by persons over whose methods Henkel Corporation has no control. It is the user's responsibility to determine the suitability of Henkel's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Henkel Corporation's products. In light of the foregoing, Henkel Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation further disclaims any liability for consequential or incidental damages of any kind, including lost profits.

LOCTITE®

Revision Number: 001.1

Issue date: 12/17/2010

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: EA 9320NA PART B 8 OZ
Product type: Adhesive for the Aerospace Industry

IDH number: 1053929
Item number: AB9358014
Region: United States

Company address:
Henkel Corporation
2850 Willow Pass Road
Bay Point, California 94565

Contact information:
Telephone: 925.458.8000 Fax: 925.458.8030
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

Physical state: Liquid
Color: Blue
Odor: Ammoniacal

HMIS:

HEALTH: *3
FLAMMABILITY: 1
PHYSICAL HAZARD: 1
Personal Protection: See MSDS Section 8

DANGER-CORROSIVE!: CAUSES EYE, SKIN AND RESPIRATORY TRACT BURNS.
MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION.
MAY BE HARMFUL IF ABSORBED THROUGH SKIN.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: Mists, vapors or liquid may cause severe irritation or burns. May cause allergic respiratory reaction.
Skin contact: This product is severely irritating to the skin and may cause burns. This product may cause an allergic skin reaction. May be harmful if absorbed through skin.
Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.
Ingestion: Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	30 - 60
Triethylenetetramine	112-24-3	30 - 60
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	1760-24-3	1 - 5

4. FIRST AID MEASURES

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

Skin contact:	Immediately wash skin thoroughly with soap and water. If symptoms develop and persist, get medical attention.
Eye contact:	Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention at once.
Ingestion:	Get immediate medical attention. Do not induce vomiting.
Notes to physician:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flash point:	> 93 °C (> 199.4 °F)
Autoignition temperature:	Not applicable
Flammable/Explosive limits - lower:	Not determined
Flammable/Explosive limits - upper:	Not determined
Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. Cartridge respirators do not provide adequate protection for fire fighters or exotherm mitigation.
Unusual fire or explosion hazards:	May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.
Hazardous combustion products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Do not allow product to enter sewer or waterways.
Clean-up methods:	Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling:	For the Part A plus Part B adhesive mixture, follow curing schedule as recommended in product literature. Do not heat Part B at temperatures greater than 100 °C (212 °F). This material may self-react at higher temperatures and cause an exotherm. The exotherm has the potential for release of excessive energy and toxic gasses. Empty containers retain product residue, so obey hazard warnings and handle empty containers as if they were full. Do not cut, grind, weld, or drill on or near this container.
Storage:	For safe storage, store between 0 °C (32°F) and 25 °C (77°F) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	None	None	None	None
Triethylenetetramine	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	None	None	None	None

Engineering controls:

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Respiratory protection:

If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection:

Wear chemical goggles; face shield (if splashing is possible).

Skin protection:

Wear impervious gloves for prolonged contact. Use of impervious apron and boots are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Blue
Odor:	Ammoniacal
Odor threshold:	Not available
pH:	Not determined
Vapor pressure:	Not determined
Boiling point/range:	Not determined
Melting point/ range:	Not determined
Specific gravity:	1.0
Vapor density:	Not applicable
Flash point:	> 93 °C (> 199.4 °F)
Flammable/Explosive limits - lower:	Not determined
Flammable/Explosive limits - upper:	Not determined
Autoignition temperature:	Not applicable
Evaporation rate:	Not determined
Solubility in water:	Negligible
Partition coefficient (n-octanol/water):	Not determined
VOC content:	< 10 g/l per SCAQMD Rule 1124 [EPA Test Method 24/304-91] (estimated)

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	May occur.
Hazardous decomposition products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.
Incompatible materials:	Keep away from strong oxidizing agents, strong Lewis or mineral acids.
Conditions to avoid:	Avoid mixing resin (Part A) and curing agent (Part B) unless you plan to use immediately. Do not heat mixed adhesive unless you plan to use immediately. Failure to observe these precautions may result in excessive heat build-up causing an exotherm.

11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	No	No	No
Triethylenetetramine	No	No	No
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	No	No	No

Hazardous components	Health Effects/Target Organs
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Corrosive
Triethylenetetramine	Allergen, Corrosive, Developmental, Irritant, Mutagen
N-(3-(Trimethoxysilyl)propyl)ethylenediamine	Irritant, Allergen

12. ECOLOGICAL INFORMATION

Ecological information: Not available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

Hazardous waste number: This product, if discarded, may be characterized as a RCRA corrosive waste, D002.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Amines, liquid, corrosive, n.o.s. (Diethylene glycol di-(3-aminopropyl) ether, Triethylenetetramine)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II

International Air Transportation (ICAO/IATA)

Proper shipping name: Amines, liquid, corrosive, n.o.s. (Diethylene glycol di-(3-aminopropyl) ether, Triethylenetetramine)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (Diethylene glycol di-(3-aminopropyl) ether, Triethylenetetramine)
Hazard class or division: 8
Identification number: UN 2735
Packing group: II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

TSCA 12(b) Export Notification: None above reporting de minimus

CERCLA/SARA Section 302 EHS: None above reporting de minimus
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA 313: None above reporting de minimus

California Proposition 65:

No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDL Status:

All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

WHMIS hazard class:

D.2.A, D.2.B, E

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Mark Mau, Regulatory Affairs Specialist

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Hysol® EA 9320NA

Epoxy Paste Adhesive

Henkel Corporation
Aerospace Group
2850 Willow Pass Road
P.O. Box 312
Bay Point, CA 94565 USA
925.458.8000
Fax: 925.458.8030
www.aerospace.henkel.com

Description

Hysol EA 9320NA is a two-component paste adhesive with good peel strength as well as elevated temperature resistance. With a room temperature cure, it will meet the requirements of MMM-A-132 Type 1 Class 2.

Features

Two Component System
High Peel
Room Temperature Cure
Good Elevated Temperature Strength
Meets Strength Requirements of MMM-A-132 Type 1 Class 2

Uncured Adhesive Properties

	<u>Part A</u>	<u>Part B</u>	<u>Mixed</u>
Color	Off White	Blue	
Viscosity, @ 77°F	4,000 Poise	0.1 Poise	
Brookfield, HBT	Spdl 7 @ 20 rpm	Spdl 1 @ 60 rpm	
Viscosity, 25°C	400 Pa·S	0.01 Pa·S	
Brookfield, HBT	Spdl 7 @ 2.1 rad/s	Spdl 1 @ 6.3 rad/s	
Density (g/ml)	1.16	1.00	1.14
Warranty Life (from date of shipment)			
@ <40°F/4°C	1 year	1 year	
@ <77°F/25°C	1 year	1 year	
@ <90°F/32°C	6 mos	1 year	

This material will normally be shipped at ambient conditions, which will not alter our standard warranty, provided that the material is placed into its intended storage upon receipt. Premium shipment is available upon request.

Handling

Mixing - This product requires mixing two components together just prior to application to the parts to be bonded. Complete mixing is necessary. The temperature of the separate components prior to mixing is not critical, but should be close to room temperature (77°F/25°C).

<u>Mix Ratio</u>	<u>Part A</u>	<u>Part B</u>
By Weight	100	19

Note: Volume measurement is not recommended for structural applications unless special precautions are taken to assure proper ratios.

Pot Life (200 gm mass) 25 minutes
Method - ASTM D 2471 in water bath.

Application

Mixing - Combine Part A and Part B in the correct ratio and mix thoroughly. THIS IS IMPORTANT! Heat buildup during or after mixing is normal. Do not mix quantities greater than 250 grams as dangerous heat buildup can occur causing uncontrolled decomposition of the mixed adhesive. TOXIC FUMES CAN OCCUR, RESULTING IN PERSONAL INJURY. Mixing smaller quantities will minimize the heat buildup.

Applying - Bonding surfaces should be clean, dry and properly prepared. For optimum surface preparation consult the Hysol Surface Preparation Guide. The bonded parts must be assembled within 10 minutes of adhesive application and held in contact until the adhesive is set. Handling strength for this adhesive will occur in 24 hours ($>77^{\circ}\text{F}/25^{\circ}\text{C}$), after which the support tooling or pressure used during cure may be removed. Since full bond strength has not yet been attained, load application should be small at this time.

Curing - Hysol EA9320NA may be cured for 5 to 7 days @ $>77^{\circ}\text{F}/25^{\circ}\text{C}$ to achieve normal performance. Accelerated cures up to $200^{\circ}\text{F}/93^{\circ}\text{C}$ (for small masses only) may be used as an alternative. For example, 1 hour @ $180^{\circ}\text{F}/82^{\circ}\text{C}$ will give complete cure.

Cleanup - It is important to remove excess adhesive from the work area and application equipment before it hardens. Denatured alcohol and many common industrial solvents are suitable for removing uncured adhesive. Consult your supplier's information pertaining to the safe and proper use of solvents.

Bond Strength Performance

Tensile Lap Shear Strength

Tensile lap shear strength tested per ASTM D 1002 after curing for 5 days @ $77^{\circ}\text{F}/25^{\circ}\text{C}$. Adherends are 2024-T3 alclad aluminum treated with phosphoric acid anodized per ASTM D3933.

<u>Test Temperature,</u> <u>$^{\circ}\text{F}/^{\circ}\text{C}$</u>	<u>Typical Results</u>	
	<u>psi</u>	<u>MPa</u>
-67/-55	3,400	23.4
77/ 25	4,600	31.7
180/82	1,500	10.3

Peel Strength

T-Peel strength tested per ASTM D1876 after curing for 5 days @ $77^{\circ}\text{F}/25^{\circ}\text{C}$. Adherends are 2024-T3 alclad aluminum treated with phosphoric acid anodized per ASTM D3933.

<u>Test Temperature, $^{\circ}\text{F}/^{\circ}\text{C}$</u>	<u>Typical Results</u>	
	<u>Lb/in</u>	<u>N/25 mm</u>
77/25	20	3.5

Service Temperature

Service temperature is defined as that temperature at which this adhesive still retains 1000 psi /6.9 MPa using test method ASTM D 1002 and is $>180^{\circ}\text{F}/82^{\circ}\text{C}$.

Henkel QC Acceptance Testing

This data sheet provides users with typical properties obtained from this adhesive. These values are not meant to be used to develop aerospace QC acceptance testing. Users interested in establishing values and tests for routine QC acceptance should request our internal specification (DAS), which provides detail test methods and values used to certify this adhesive.

Bulk Resin Properties

Tensile Properties - tested using 0.125 inch/3.18 mm castings per ASTM D638.

Tensile Strength @ 77°F/25°C	5,000 psi	34.5 MPa
Tensile Modulus @ 77°F/25°C	330 ksi	2,274 MPa
Elongation at Break, % @ 77°F/25°C	9.0	
Shore D Hardness @ 77°F/25°C	81	
T _g (by DMTA)	180°F	82°C
Shear Modulus	145 ksi	999 MPa

Compressive Properties - tested using 0.5 inch/12.7 mm castings per ASTM D 695.

Compressive Strength, @ 77°F/25°C	8,000 psi	55.1 MPa
Compressive Modulus @ 77°F/25°C	265 ksi	1,826 MPa

Electrical Properties - tested per ASTM D149, D150

Dielectric Constant, 1 KHz, 77°F/25°C	4.39
Dissipation Factor, 1 KHz, 77 F/25°C	0.024

Handling Precautions

Do not handle or use until the Material Safety Data Sheet has been read and understood.
For industrial use only.

General:

As with most epoxy based systems, use this product with adequate ventilation. Do not get in eyes or on skin. Avoid breathing the vapors. Wash thoroughly with soap and water after handling. Empty containers retain product residue and vapors, so obey all precautions when handling empty containers.

PART A

WARNING! As with most epoxy based systems, the uncured adhesive causes eye irritation or allergic dermatitis. Contains epoxy resins.

PART B

DANGER! Causes severe skin and eye burns. Prolonged or repeated exposure may cause allergic skin reactions. Vapors may be irritating to the respiratory tract.

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Rev. 1/01

DISCLAIMER: The information supplied in this document is for guidance only and should not be construed as a warranty. All implied warranties are expressly disclaimed, including without limitation any warranty of merchantability and fitness for use. All users of the materials are responsible for assuring that it is suitable for their needs, environmental and use. All data is subject to change as Henkel deems appropriate.

Users should review the Materials Safety Data Sheet (MSDS) and product label for the material to determine possible health hazards, appropriate engineering controls and precautions to be observed in using the material. Copies of the MSDS and label are available upon request.



Henkel Corporation
Aerospace Group
2850 Willow Pass Road
P.O. Box 312
Bay Point, CA 94565 USA
925.458.8000
www.aerospace.henkel.com

Michael Gregoire

From: Lauren Price (Ventes/Sales for Air Dynamics) <info@airdynamics.ca>
Sent: Friday, July 25, 2014 8:53 AM
To: Michael Gregoire
Cc: Sarah Fairhurst
Subject: RE: Dart Aerospace RFQ EA9320 (Air Dynamics)
Attachments: EA_9320NA.pdf

Hi Mike,

Sorry for the delay.

Please see the following for your quotation. Data sheet is attached.

Qty 1 EA9320 HYSOL ADHESIVE (QT.KIT) Price: \$250.00 each Delivery: 2-3 weeks (approx
Exp: May 31/2015)

Please note, if you require a certain spec there may be additional charges

Canadian Funds
Taxes not included
FOB Baie D'Urfe

Regards,
Lauren

Air Dynamics Ltd.
19420B Clark Graham Avenue
Baie D'Urfe, Quebec
H9X 3R8
Toll Free: 1-800-229-5280
Phone: 514-457-4287
Fax: 514-457-4143

From: Michael Gregoire [<mailto:mgregoire@dartaero.com>]
Sent: July 23, 2014 10:06 AM
To: Lauren Price (Ventes/Sales for Air Dynamics)
Cc: 'Sarah Fairhurst'
Subject: RE: Dart Aerospace RFQ EA9320 (Air Dynamics)

Hi Lauren,
No, just the data sheet.
Mike

From: Lauren Price (Ventes/Sales for Air Dynamics) [<mailto:info@airdynamics.ca>]
Sent: Wednesday, July 23, 2014 9:21 AM
To: Michael Gregoire
Cc: 'Sarah Fairhurst'
Subject: RE: Dart Aerospace RFQ EA9320 (Air Dynamics)

Hi Mike,

We have just been advised by Henkel that they cannot provide spec sheets for this item.
Is there a certain spec you need this item certified to?

Please advise.

Regards,
Lauren

Air Dynamics Ltd.
19420B Clark Graham Avenue
Baie D'Urfe, Quebec
H9X 3R8
Toll Free: 1-800-229-5280
Phone: 514-457-4287
Fax: 514-457-4143

From: Lauren Price (Ventes/Sales for Air Dynamics) [<mailto:info@airdynamics.ca>]
Sent: July 21, 2014 2:25 PM
To: 'Michael Gregoire'
Cc: 'Sarah Fairhurst'
Subject: RE: Dart Aerospace RFQ EA9320 (Air Dynamics)

Hi Mike,

Will advise shortly. We don't have this item in stock.

Regards,
Lauren

Air Dynamics Ltd.
19420B Clark Graham Avenue
Baie D'Urfe, Quebec
H9X 3R8
Toll Free: 1-800-229-5280
Phone: 514-457-4287
Fax: 514-457-4143

From: Michael Gregoire [<mailto:mgregoire@dartaero.com>]
Sent: July 21, 2014 2:19 PM
To: Lauren Price (Ventes/Sales for Air Dynamics)
Cc: Sarah Fairhurst
Subject: EA9320

Hello Lauren,
Can you get me a price for 1 quart of this Hysol product along with a spec sheet?
Regards,
Mike